

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
20 October 2005 (20.10.2005)

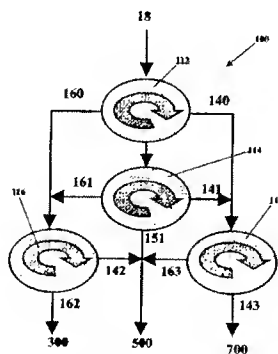
PCT

(10) International Publication Number
WO 2005/097333 A1

- (51) International Patent Classification⁷: **B03C 7/12**, 7/10, 1/30 (74) Agents: **BORG, Keith, Joseph** et al.; Halford & Co, 1 Market Street, Sydney, New South Wales 2000 (AU).
- (21) International Application Number: PCT/AU2005/000508 (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 7 April 2005 (07.04.2005) (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SI, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 2004901878 7 April 2004 (07.04.2004) AU
- (71) Applicant (*for all designated States except US*): **ROCHE MINING (MT) PTY LIMITED** [AU/AU]; 11 Elysium Road, Carrara, Queensland 4211 (AU).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **SELVEY, Bruce, Albert** [AU/AU]; 3 Penelope Place, Benowa, Queensland 4217 (AU). **KRUGER, Johannes, Arnoldus** [ZA/AU]; 6 Malita Place, Pacific Pines, Queensland 4211 (AU). **PALMER, Mark, Kenneth** [AU/AU]; 30 Horizon Avenue, Ashmore, Queensland 4214 (AU). **BORG, Keith, Joseph** [AU/AU]; 47 Hydræ Street, Revesby, New South Wales 2212 (AU).
- Published:**
— with international search report

[Continued on next page]

(54) Title: A MINERAL SEPARATION PLANT DEVICE



(57) Abstract: The present invention provides an electrostatic separation device to separate components of a mixture of particulates, said device including a means to electrostatically charge said particulates and a first roll and a second roll which are conductive, said first and second roll being arranged one above the other, said device including third and fourth rolls which are also conductive, said first and second rolls each producing a non-conductive output and conductive output, which proceeds respectively to said third roll and said fourth roll, with said first and second rolls producing a mids output, said mids output from said first roll proceeding onto said second roll. The present invention also provides a method of separating particulates from a mixture of particulates, said method including the steps of electrostatically charging said particulates and passing same over a first and second rolls which are conductive, whereby the non-conductive output and conductive output of said first roll bypasses said second roll, said second roll processing only the mids output from said first roll. The present invention also provides a separation plant having such a device or utilising such a method. The present invention further provides an electrostatic and magnetic mineral separation device having a roll onto which a feed of particulate to be separated can be introduced, said roll including a magnetic means associated therewith to allow magnetic forces to act on said particulates and thereby attract said particulates to said roll, said roll also being conductive and said device including a means to electrostatically charge said particulates so that conductive particulate is removed from said roll before non conductive particulate.

WO 2005/097333 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.